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USER'S GUIDE TO NUTRAN:

A COMPUTER ANALYSIS SYSTEM FOR

LONG-TERM REPOSITORY SAFETY

by

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ABSTRACT

The NUTRAN package of computer programs calculates doses to humans from radioactivity carried out of deep geologic waste repositories by groundwater. It consists of four programs: ORIGEN (developed by Oak Ridge National Laboratory), which treats the formation and decay of radionuclides, WASTE, which computes the transport of radionuclides in groundwater, BIODOSE, which calculates radionuclide transport in surface waters and ecosystems and human exposures, and PLOT, which combines the results of WASTE and BIODOSE into usefully formatted outputs. This report documents the WASTE, BIODOSE, and PLOT programs. The equations they compute are presented in detail and their meaning is explained. Inputs and outputs are described ; and the function of each subroutine is summarized.

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